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PATENT

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Steven A. Sunshine *et al.*

Application No.: Unassigned

Filed: Herewith

For: ALIGNED PARTICLE BASED SENSOR ELEMENTS

Examiner: Easthorn, K. (parent)

Art Unit: 2832 (parent)

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination of the above-referenced application, please enter the following amendments and remarks.

IN THE CLAIMS:

Please cancel claims 1-28 without prejudice or disclaimer.

Please add the following new claims 29-53:

29. (New) A field-structured sensor to measure an environmental parameter, comprising:

a) a field-structured composite comprising a solid nonconducting medium, and an ordered aggregate structure of conducting magnetic particles within said medium;

b) electrodes positioned to allow the electrical resistance of said composite to be measured; and,

c) a coupling mechanism which couples the environmental parameter to said composite.

30. (New) The field-structured sensor of claim 29, further comprising environmental parameter isolation means such that the environmental parameter is the dominant influence affecting the electrical resistance of said composite.

31. (New) The field-structured sensor of claim 30, wherein the environmental parameter isolation means comprise thermal insulation.

32. (New) The field-structured sensor of claim 31, wherein the environmental parameter isolation means comprise a temperature controller.

33. (New) The field-structured sensor of claim 30, wherein the environmental parameter isolation means comprise a chemical barrier.

34. (New) The field-structured sensor of claim 30, wherein the environmental parameter isolation means comprise a substantially opaque barrier.

35. (New) The field-structured sensor of claim 30, wherein the environmental parameter isolation means comprise a substantially rigid enclosure.

36. (New) The field-structured sensor of claim 29, wherein the environmental parameter is stress applied to the sensor, and the coupling mechanism transmits stress applied to the sensor to said composite.

37. (New) The field-structured sensor of claim 30, wherein the environmental parameter is stress applied to the sensor, and the coupling mechanism transmits stress applied to the sensor to said composite.

38. (New) The field-structured sensor of claim 37, wherein the stress applied to the sensor is generated by an accelerometer mass in functional relation to the coupling mechanism.

39. (New) The field-structured sensor of claim 38, wherein the electrodes are positioned so as to allow measurement of multiple axes of acceleration.

40. (New) The field-structured sensor of claim 29, wherein the environmental parameter is an applied magnetic field.

41. (New) The field-structured sensor of claim 30, wherein the environmental parameter is an applied magnetic field.

42. (New) The field-structured sensor of claim 29, wherein the environmental parameter is temperature, and the coupling mechanism comprises a strong thermal link to the immediate environment of the sensor.

43. (New) The field-structured sensor of claim 30, wherein the environmental parameter is temperature, and the coupling mechanism comprises a strong thermal link to the immediate environment of the sensor.

44. (New) The field-structured sensor of claim 29, wherein the environmental parameter is electromagnetic radiation incident on the sensor, the coupling mechanism comprises optics which direct said electromagnetic radiation onto the field-

structured composite, thereby heating the composite and changing its electrical conductivity.

45. (New) The field-structured sensor of claim 30, wherein the environmental parameter is electromagnetic radiation incident on the sensor, and the coupling mechanism comprises optics which direct said electromagnetic radiation onto the field-structured composite, thereby heating the composite and changing its electrical conductivity.

46. (New) The field-structured sensor of claim 29, wherein the environmental parameter is electromagnetic radiation incident on the sensor, the nonconducting medium is a semiconductor, the coupling mechanism comprises optics which direct said electromagnetic radiation onto the field-structured composite, generating electron-hole pairs within the nonconducting medium, thereby changing the electrical conductivity of the composite.

47. (New) The field-structured sensor of claim 30, wherein the environmental parameter is electromagnetic radiation incident on the sensor, the nonconducting medium is a semiconductor, the coupling mechanism comprises optics which direct said electromagnetic radiation onto the field-structured composite, generating electron-hole pairs within the nonconducting medium, thereby changing the electrical conductivity of the composite.

48. (New) The field-structured sensor of claim 29, wherein the environmental parameter is concentration of a selected chemical in a background carrier, and the coupling mechanism exposes the composite to said carrier.

49. (New) The field-structured sensor of claim 48, wherein the nonconducting medium changes volume when exposed to the selected chemical.

50. (New) The field-structured sensor of claim 48, wherein the surface stress of the nonconducting medium changes when exposed to the selected chemical.

51. (New) The field-structured sensor of claim 48, wherein a surface of said composite is coated with a surface layer whose surface stress changes when exposed to the selected chemical.

52. (New) The field-structured sensor of claim 48, wherein said nonconducting medium is porous.

53. (New) The field-structured sensor of claim 30, wherein the environmental parameter is concentration of a selected chemical in a background carrier, and the coupling mechanism exposes the composite to said carrier.

REMARKS

New claims 29-53 have been added by this amendment to the above-referenced patent application to more particularly set forth the present invention. Claims 29-53 have been added to copy claims 1-25 from U.S. Patent No. 6,194,769 ("the '769 patent") to Martin, *et al.*, issued February 27, 2001, from U.S. Application Serial No. 323,172, filed May 27, 1999..

New claims 29-53 correspond exactly to claims 1-25 as issued in the '769 patent. Support for the foregoing newly presented claims can be found in the specification and claims as originally filed.

Applicants note that 35 U.S.C. §135(b) requires a claim in an application of an issued patent be made prior to one year from the date the patent was granted. Under *Switzer v. Stockman*, 217 USPQ 226, 230 (CCPA 1964), the anniversary date of the issuance of a patent is "prior to one year from the date on which the patent was

granted." (See, MPEP §2307.02.). Thus, this filing satisfies the statutory requirements of 35 U.S.C. §135(b).

Early action on the merits is respectfully solicited.

CONCLUSION

In view of the foregoing, Applicants respectfully request early action on the merits.

Respectfully submitted,

, CEO

Cyrano Sciences, Inc, *pro se*

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